

## CGEP Nanotechnology Course Sharing Plan

The following courses are planned for offering over four semesters. The courses are grouped here by certificate area. Some of these courses will not be offered and others may be added. This listing contains ~80% of the courses that will be offered. When a course has letters after its title, e.g. NE or NB, that course can be used in the associated certificate program. For instance, the course "Microelectronics Fabrication at the Nano Node" can be used by a student pursuing either the Nanomanufacturing or the Nanoelectronics certificate. Please note that a single course cannot count towards two graduate certificates in this program. For each certificate, a student must take four unique courses.

### Nanomanufacturing (NM)

Microelectronics Fabrication at the Nano Node	NE
Plasma Processing at the Nanoscale	NE
Nanoscale Synthesis & Processing: Liquid Phase	
Semiconductor Manufacturing	NE
Broader Societal Issues in Nanotechnology	

### Nanomodeling and Simulation (NS)

Modeling in Materials Science	
Introduction to Computational Analysis	
Nanotransport	
Nanoscale Mechanical & Structural Properties of Materials	NC

### Nanomaterials and Characterization (NC)

Introduction to Nanomaterials	NE, NB
Materials Characterization	
Materials Science of Surfaces and Interfaces	
Nanoscale Carbon	
Electron Microscopy of Crystals	

### Nanoelectronics (NE)

Nanoelectronics	
Spintronics	
VLSI Design	
Advanced Semiconductor Devices: Optoelectronics	
Nanophotonics	

### Nanobiotechnology (NB)

Nanoscale Biosensors	
Biomedical Nanotechnology	
Tissue Engineering	
Introduction to Molecular and Cell Biology for Engineers	

Additional courses are anticipated in the realm of Nanotechnology Fundamentals. These courses (listed below) will not count towards one of the certificates. However, they will be available in the CGEP nanotechnology course sharing program.

Introduction to Solid State Physics	
Semiconductor Device Fundamentals	
Quantum Mechanics for Engineers	
Engineering Mathematics I	